What is claimed is:

SUBA1) 1. A method for analyzing data acquired by reading an optical disc having at least one readable nonoperational structure, said method comprising identifying a pattern in said data that reports a physical property of said nonoperational structure.

SUB 1 2. The method of claim 1 wherein said data are a digitized sample of at least one analog signal.

3. The method of claim 2 wherein said at least one analog signal is derived from a signal selected from a group consisting of a high frequency signal, a tracking error signal, a focus error signal, and any combination thereof.

4. The method of claim 3 wherein said at least one analog signal comprises multiple analog signals.

5. The method of claim 4 further comprising:

combining said multiple analog signals to form a combined analog signal; and

quantizing said combined analog signal to form said data.

6. The method of claim 5 wherein said combining said analog signals comprises combining said analog signals in a synchronized manner.

7. The method of claim 2 further comprising:

quantizing each of said analog signals to form individual digitized data sets; and

combining said individual digitized data sets to form said data.

8. The method of claim 7 wherein said combining said data sets comprises combining in a synchronized manner.

9. The method of claim 2 wherein said digital sample was acquired in a substantially continuous manner.

10. The method of claim 2 wherein said digital sample was acquired in a substantially noncontinuous manner.

11. The method of claim 1 wherein said pattern is substantially continuous within said digital sample.

12. The method of claim 11 wherein said substantially continuous pattern corresponds to a length along a track in a radial direction.

13. The method of claim 1 wherein said pattern is substantially discontinuous within said digital sample.

14. The method of claim 13 wherein said discontinuous pattern corresponds to a cluster of data features.

15. The method of claim 14 wherein at least two of said cluster data features correspond to different structures positioned along different turns of said disc.

16. The method of claim 13 wherein said discontinuous pattern includes multiple data features that correspond to at least one nonoperational structure.

17. The method of claim 13 wherein said discontinuous pattern comprises at least one discontinuity between two continuous regions, and wherein said discontinuity itself reports a physical property of said nonoperational structure.

18. The method of claim 17 wherein said discontinuity indicates that said continuous regions correspond to structures that are substantially tangentially located with respect to one another.

19. The method of claim 18 wherein said discontinuity indicates that said continuous regions correspond to structures on the same turn of a track.

20. The method of claim 17 wherein said discontinuity indicates that said continuous regions correspond to structures on different turns of said disc.

21. The method of claim 14 wherein said identifying comprises associating result objects that correspond to said data features.

22. The method of claim 14 wherein said reported physical property is a property disposed tangentially on said disc.

23. The method of claim 22 wherein said reported physical property is a structural size measured in a tangential direction.

SUB A3> 24. The method of claim 1 wherein said reported physical property inheres in said nonoperational structure.

25. The method of claim 24 wherein said reported physical property is independent of an absolute position of said pattern in said data.

SUB A4> 26. The method of claim 25 wherein said nonoperational structure produces a substantial analog signal in only one turn of a disc.

SUB B1> 27. The method of claim 24 wherein said reported property depends upon a position of said pattern in said data.

SUB A5> 28. The method of claim 27 wherein said at least one nonoperational structure produces a substantial analog signal in at least two different turns of a disc.

SUB B2> 29. The method of claim 28 wherein said identifying comprises using the relative position of the pattern on the disc.

30. The method of claim 28 wherein said identifying comprises reporting the size of a bead that crosses at least two different turns.

SUB A6> 31. The method of claim 1 wherein said identifying comprises identifying a plurality of nonoperational features, said method further comprising counting said plurality of nonoperational features.

32. The method of claim 1 wherein said physical property depends at least in part upon

disposition of said at least one nonoperational structure on said disc.

33. The method of claim 32 wherein said physical property depends on an optical interaction between a laser beam, at least one nonoperational structure, and the disc.

34. The method of claim 33 wherein said nonoperational structure is a translucent bead and said optical interaction is a lensing effect of said bead.

35. The method of claim 34 wherein said physical property is an ability of said bead to focus the laser beam near a groove of said disc.

SUB A6 36. The method of claim 32 wherein said reported physical property is independent of an absolute position of said pattern in said data.

37. The method of claim 32 wherein said reported physical property is dependent on a position of said pattern in said data.

38. The method of claim 1 wherein said trackable optical disc includes at least one spiral track.

SUB A7 39. A method of analyzing data generated by reading a trackable optical disc having a plurality of physically nonidentical concurrently readable nonoperational structures, said method comprising identifying patterns in said data that distinguish among said physically nonidentical nonoperational structures.

Sub b1

40. The method of claim 39 wherein said data are a digitized sample of at least one analog signal.

41. The method of claim 40 wherein said at least one analog signal is derived from a signal selected from a group consisting of a high frequency signal, a tracking error signal, a focus error signal, and any combination thereof.

42. The method of claim 41 wherein said at least one analog signal comprises multiple analog signals.

43. The method of claim 42 further comprising:

combining said multiple analog signals to form a combined analog signal; and

quantizing said combined analog signal to form said data.

44. The method of claim 43 wherein said combining said analog signals comprises combining said signals in a synchronized manner.

45. The method of claim 42 further comprising:

quantizing each of said signals to form individual data sets; and

combining said individual data sets to form said data.

46. The method of claim 45 wherein said combining said data sets comprises combining said data sets in a synchronized manner.

47. The method of claim 40 wherein said digital sample was acquired in a substantially continuous manner.

48. The method of claim 40 wherein said digital sample was acquired in a substantially noncontinuous manner.

49. The method of claim 39 wherein at least one of said patterns is continuous within said digital sample.

50. The method of claim 49 wherein said continuous pattern corresponds to a length along a track in a radial direction.

51. The method of claim 39 wherein at least one of said patterns is discontinuous within said digital sample.

52. The method of claim 51 wherein said discontinuous pattern corresponds to a cluster of data features.

SUB A8) 53. The method of claim 52 wherein at least two of said cluster data features correspond to structures positioned along different turns of said disc.

54. The method of claim 51 wherein said discontinuous pattern includes multiple data features that correspond to at least one nonoperational structure.

55. The method of claim 39 wherein said identifying comprises identifying in a manner that is

independent of absolute position of said pattern in said data.

SUB A9> 56. The method of claim 55 wherein said nonoperational structures produce discernable and substantial analog signals in only one turn of a track.

57. The method of claim 55 wherein said plurality of structures comprises at least two classes of structures, said method further comprising counting the number of at least one class of said structures.

58. The method of claim 55 wherein said identifying comprises identifying in a manner that is dependent of absolute position of said pattern in said data.

SUB A10> 59. The method of claim 55 wherein said at least one class of nonoperational structure produces a substantial analog signal in two or more different turns of a track.

SUB A11> 60. The method of claim 55 wherein said identifying comprises using relative positions of the patterns on the disc.

61. The method of claim 39 wherein at least one of said patterns depends at least in part upon disposition of said structures on said disc.

62. The method of claim 61 wherein said pattern depends on an optical interaction between a laser beam, at least one nonoperational structure, and the disc.

63. The method of claim 62 wherein said nonoperational structure is a translucent bead and said optical interaction is a lensing effect of said bead.

64. The method of claim 61 wherein said identifying comprises distinguishing patterns in said data in a manner that is independent of absolute positions of said patterns in said data.

65. The method of claim 61 wherein said identifying comprises distinguishing patterns in said data in a manner that is dependent on absolute positions of said patterns in said data.

66. The method of claim 39 further comprising counting at least one of said patterns in said data.

67. The method of claim 39, further comprising outputting a report that includes results of said identifying.

68. The method of claim 67 wherein said outputting comprises displaying said report visually.

69. The method of claim 68 wherein said displaying is on an electronic display.

70. The method of claim 67 wherein said outputting comprises printing said report on a tangible medium.

71. The method of claim 67 wherein said outputting comprises transmitting said report by sound.

72. The method of claim 67 wherein said outputting comprises transmitting said report remotely.

73. The method of claim 67 wherein said outputting comprises storing said report in a manner selected from a group comprising transient storing and permanent storing.

74. The method of claim 39 wherein said trackable optical disc includes at least one spiral track.

SUB A12

75. A method in a computer system of determining the relative physical locations of a first nonoperational structure and a second nonoperational structure on a surface of an optical disc, said method comprising:

reading said optical disc to generate data;

identifying in the data (i) a first pattern that reports a physical property of said first nonoperational structure and (ii) a second pattern that reports a physical property of said second nonoperational structure; and

calculating at least relative physical locations of said first and second nonoperational structures on the disc.

76. The method of claim 75 wherein said optical disc includes at least one start of record marker that is capable of triggering said reading, said reading comprising:

detecting said start of data marker; and

generating at least one data record in response to said detecting said marker.

77. The method of claim 76 further comprising:

detecting an end of data marker; and

terminating said reading in response to said detecting said end of data marker.

78. The method of claim 77 wherein said detecting a start of data marker, said generating at least one data record, said detecting an end of data marker, and said terminating said generating is repeatedly performed, and wherein said data comprises data features between said generated data records.

79. The method of claim 75 wherein said reading occurs between a start of record marker and an end of data marker on said disc.

80. The method of claim 79 wherein said markers can be logical or physical markers.

81. The method of claim 75 wherein said calculating comprises calculating the locations by mapping the patterns in said data according to a predetermined mapping routine.

SUB A13 82. The method of claim 81 wherein said predetermined mapping routine uses a known position on said disc to mapping said patterns.

83. The method of claim 82 wherein said known position is selected from a group consisting of a start of record marker position and an end of marker position.

84. The method of claim 81 wherein said known position is selected from a group consisting of a

tangential position, a radial position, and a combination thereof.

SUB A14) 85. The method of claim 75 wherein said first and second nonoperational structures are physically nonidentical, said identifying comprising distinguishing between and said first and second patterns.

86. The method of claim 75 wherein at least one of said identifying and calculating is performed iteratively to determine said relative physical locations.

87. The method of claim 75 wherein said surface is selected from a group consisting of an internal disc surface and an external disc surface.

88. The method of claim 75 wherein said trackable optical disc includes at least one spiral track.

SUB A15) 89. A method in a computer system of mapping the physical locations of nonoperational structures on a surface of an optical disc, comprising:

determining a relative physical location of at least one of said nonoperational structures; and

marking an representation of the surface of an optical disc with at least one object that reflects said at least one relative physical location.

90. The method of claim 89 wherein said method of determining comprises:

reading said optical disc to generate data;

identifying in the data: (i) a first pattern that reports a physical property of said first nonoperational structure and (ii) a second pattern that reports a physical property of said second nonoperational structure; and

calculating relative physical locations of said first and second nonoperational structures on the disc.

91. The method of claim 89 wherein at least one of said nonoperational structures includes a plurality of distinguishable objects.

92. The method of claim 91 wherein each of said plurality of distinguishable objects corresponds to a separately identifiable pattern in said data.

SUB A16) 93. A method in a computer system of classifying an object having at least one sub-centimeter dimension, said method comprising:

generating data by reading a trackable optical disc upon or within which said object is disposed as a concurrently readable nonoperational structure; and

identifying a pattern in said data that reproducibly distinguishes said object.

94. The method of claim 93 wherein said data are a digitized sample of at least one analog signal.

95. The method of claim 94 wherein said at least one analog signal is derived from a signal selected from a group consisting of a high frequency signal, a tracking error signal, a focus error signal, and any combination thereof.

96. The method of claim 95 wherein said at least one analog signal comprises multiple analog signals.

97. The method of claim 96 further comprising:

combining said multiple analog signals to form a combined analog signal; and

quantizing said combined analog signal to form said data.

98. The method of claim 97 wherein said combining said analog signals comprises combining in a synchronized manner.

99. The method of claim 96 further comprising:

quantizing each of said signals to form individual digitized data sets; and

combining said individual digitized data sets to form said data.

100. The method of claim 99 wherein said combining said data sets comprises combining in a synchronized manner.

101. The method of claim 94 wherein said digital sample was acquired in a substantially continuous manner.

102. The method of claim 94 wherein said digital sample was acquired in a substantially noncontinuous manner.

103. The method of claim 93 wherein said pattern is continuous within said digital sample.

104. The method of claim 103 wherein said continuous pattern corresponds to a length along a track in a radial direction.

105. The method of claim 93 wherein said pattern is discontinuous within said digital sample.

106. The method of claim 105 wherein said discontinuous pattern corresponds to a cluster of data features.

SUB A17

107. The method of claim 106 wherein at least two of said cluster data features correspond to one of either (a) different structures or (b) different portions of a single structure, that are positioned along different turns of said disc.

108. The method of claim 105 wherein said discontinuous pattern includes multiple data features that correspond to at least one nonoperational structure.

109. The method of claim 105 wherein said discontinuous pattern comprises at least one discontinuity between two continuous regions, and wherein said discontinuity itself reports a physical property of said nonoperational structure.

110. The method of claim 109 wherein said discontinuity indicates that said continuous regions correspond to structures on tracks that are substantially tangentially located with respect to one another.

111. The method of claim 110 wherein said discontinuity indicates that said continuous regions correspond to structures on a single turn.

112. The method of claim 110 wherein said identifying comprises associating result objects that correspond to said structures.

113. The method of claim 110 wherein said reported physical property is a property disposed tangentially on said disc.

114. The method of claim 113 wherein said reported physical property is a size measured in a tangential direction.

115. The method of claim 93 wherein said identifying comprises using the relative position of the pattern on the disc.

116. The method of claim 115 wherein said identifying comprises reporting the size of a bead that crosses at least two turns.

SUB A19> 117. The method of claim 93 wherein said identifying comprises using a physical property that depends at least in part upon disposition of said at least one nonoperational structure on said disc.

118. The method of claim 117 wherein said physical property depends on an optical interaction between a laser beam, at least one nonoperational structural structure, and the disc.

119. The method of claim 118 wherein said nonoperational structure is a translucent bead and said optical interaction is a lensing effect of said bead.

120. The method of claim 119 wherein said physical property is an ability of said bead to focus the laser beam on a groove.

121. The method of claim 117 wherein said reported physical property is independent of a position of said pattern in said data.

122. The method of claim 117 wherein said reported physical property is dependent on a position of said pattern in said data.

123. The method of claim 93 further comprising counting at least one class of said patterns in said data.

124. The method of claim 93 wherein said identifying comprises comparing said identified pattern to at least one of a plurality of earlier-identified patterns.

125. The method of claim 93 further comprising outputting a report that includes a class of said object after said identifying.

126. The method of claim 125 wherein said outputting comprises displaying said report visually.

127. The method of claim 126 wherein said displaying is on an electronic display.

128. The method of claim 125 wherein said outputting comprises printing said report on a tangible medium.

129. The method of claim 125 wherein said outputting comprises transmitting said report by sound.

130. The method of claim 125 wherein said outputting comprises transmitting said report remotely.

131. The method of claim 125 wherein said outputting comprises storing said report in a manner selected from a group comprising transient storing and permanent storing.

132. The method of claim 93 wherein said trackable optical disc includes at least one spiral track.

SUB A19 133. A method for analyzing data comprising:

retrieving said data acquired from a trackable optical disc with concurrently readable nonoperational structures;

analyzing said data;

generating at least one result object; and

outputting said at least one result object.

134. The method of claim 133 further comprising initializing at least one program parameter before analyzing said data.

135. The method of claim 134 wherein said initializing comprises initializing at least one parameter selected from a group consisting of a memory

allocation parameter, a form parameter, and any combination thereof.

136. The method of claim 134 wherein said initializing comprises setting said at least one program parameter to a default value.

137. The method of claim 133 wherein said retrieving comprises retrieving said data from a source selected from a group consisting of a direct source and a stored data source.

138. The method of claim 137 wherein said retrieving comprises retrieving from a direct source, wherein said direct source provides a data stream.

139. The method of claim 137 wherein said retrieving comprises retrieving at least one data record from a stored data source.

140. The method of claim 139 wherein a data record comprises at least one data item.

141. The method of claim 140 wherein a data record comprises between 1 and about 30,000 data items.

142. The method of claim 139 wherein said at least one data record comprises at least two data records of differing sizes.

143. The method of claim 139 wherein said at least one data record comprises at least two data records of the same size.

144. The method of claim 137 wherein said source is predetermined.

145. The method of claim 137 wherein said source is determined by an external process.

146. The method of claim 137 wherein said source is determined by a user.

147. The method of claim 137 further comprising selecting a source, wherein said source is selected from a group consisting of a local data source and a remote data source.

SUB A20 148. The method of claim 137 wherein said data are selected from a group consisting of operational data, nonoperational data, and a combination thereof.

149. The method of claim 133 wherein at least one of said retrieving and said analyzing comprises filtering said data.

150. The method of claim 149 wherein said data corresponds to an amount of data, wherein said filtering comprises reducing said amount of data.

151. The method of claim 133 further comprising acquiring said data using an optical disc reader.

152. The method of claim 151 wherein said optical disc includes at least one start of record marker that is capable of triggering said acquiring, said acquiring comprising:

detecting said start of data marker;

generating at least one data record in response to said detecting said start of data marker.

153. The method of claim 152 wherein said acquiring further comprises:

detecting an end of data marker; and

terminating said acquiring in response to said detecting said end of data marker.

154. The method of claim 153 wherein said detecting a start of data marker, said generating data record, said detecting an end of data marker, and said terminating said generating are repeatedly performed, and wherein said data comprises data features between said generated data records.

155. The method of claim 154 wherein said acquiring occurs between a start of record marker and an end of data marker on said disc.

156. The method of claim 155 wherein said markers can be logical or physical markers.

157. The method of claim 133 further comprising filtering said data before said retrieving.

158. The method of claim 133 wherein said analyzing comprises processing one or more data records.

SUB A21 159. The method of claim 158 wherein said analyzing comprises distinguishing operational data features from nonoperational data features.

160. The method of claim 159 wherein said distinguishing yields at least one of said operational data features.

161. The method of claim 160 wherein said at least one of said operational data features corresponds to a structure that is selected from a group consisting of a tracking information structure, an address information structure, a disc speed indicating structure, and an end of data structure.

162. The method of claim 159 wherein said distinguishing comprises decoding at least one data record.

SUB A22 163. The method of claim 162 wherein said decoding comprises:

identifying at least one of said nonoperational data features; and

counting said nonoperational data features.

164. The method of claim 162 further comprising notifying at least one other process for further processing.

165. The method of claim 163 wherein said identifying comprises applying threshold criteria to said at least one data record.

166. The method of claim 165 wherein said applying comprises applying to said at least one data record at least one criterion selected from a group consisting of amplitude, sign, magnitude, slope, time period, width, and any combination thereof.

167. The method of claim 159 wherein said distinguishing comprises characterizing at least one data feature according to a method selected from a

group consisting of shape analysis, Fourier analysis, auto-correlation, masking, and any combination thereof.

168. The method of claim 167 wherein said characterizing comprises characterizing a cluster of data features in at least one data record.

169. The method of claim 133 wherein said generating comprises generating at least one chart selected from a group consisting of a map chart, a jitter chart, and a histogram chart.

170. The method of claim 169 wherein said generating comprises generating a map chart that includes at least one visible object selected from a group consisting of a mapping marker and a viewable class.

171. The method of claim 133 wherein said result object is selected from a group consisting of a simple result object that includes a single structure and a composite result object that includes a plurality of structures.

172. The method of claim 171 wherein said generating is selected from a group consisting of continuously generating during said retrieving and generating after said retrieving.

173. The method of claim 172 wherein said generating is upon detection of a feature in said data.

174. The method of claim 133 further comprising transmitting said objects to other processes.

175. The method of claim 133 further comprising providing a user an ability to select one of said result objects before said outputting.

176. The method of claim 133 wherein said providing comprises providing said user an ability to manipulate said result object before outputting.

177. The method of claim 176 wherein said ability to manipulate is selected from a group consisting of an ability to zoom, pan, and resize said result object.

178. The method of claim 133 wherein said outputting is selected from a group consisting of storing, displaying, and printing.

179. The method of claim 133 wherein any of said retrieving, analyzing, generating, and outputting can be performed iteratively.

180. The method of claim 133 wherein said generating comprises calculating debug information, and wherein said outputting comprises outputting said debug information.

181. The method of claim 133 wherein said trackable optical disc includes at least one spiral track.

SUB A23 182. A computer readable medium containing data acquired from an optical disc with a spiral track that includes concurrently readable nonoperational structures.

183. The medium of claim 182 wherein said data includes patterns that can be mapped according to positional information present in the digital data.

SUB A24> 184. The medium of claim 183 wherein said data includes at least one result object that indicates the position of at least one of said nonoperational structures detected on a surface of said disc.

185. The medium of claim 184 wherein said surface of said disc is selected from a group consisting of an external surface and an internal surface.

SUB A25> 186. A computer readable medium containing instructions for analyzing data from an optical disc with a spiral track that includes concurrently readable nonoperational structures.

187. A system for analyzing data acquired from a spiral trackable optical disc with concurrently readable nonoperational structures, said system comprising a computer capable of retrieving said data, analyzing said data, generating at least one result object, and outputting said at least one result object.

188. A system for remotely analyzing data, said system comprising:

a client computer capable of:

acquiring data from a trackable optical disc with concurrently readable nonoperational structures, and

transmitting said data over a remote connection; and

a server computer capable of:

receiving said data over the remote connection,

analyzing said data, and

generating at least one result object from said data.

189. The system of claim 188 wherein said remote connection is an Internet connection.

190. The system of claim 189 wherein said server computer is further capable of transmitting said at least one result object over the remote connection to the client computer.

191. The system of claim 189 wherein the trackable optical disc comprises at least one spiral track.

SUB A26

192. The system of claim 189 wherein said server computer is capable of analyzing by identifying patterns in said data that reproducibly distinguish underlying structures.

193. The system of claim 189 wherein said server computer is capable of analyzing by identifying a pattern in said data that reports a physical property of at least one of said nonoperational structures.

194. The system of claim 189 wherein said client computer is capable of acquiring data by reading a disc that has a plurality of physically nonidentical concurrently readable nonoperational structures, and wherein said server computer is capable of analyzing said data by identifying patterns in said data that distinguish among physically nonidentical nonoperational structures.

195. The system of claim 189 wherein said client computer is capable of reading the optical disc to generate data, and wherein said server computer is capable of:

analyzing the data by identifying in the data (i) a first pattern that reports a physical property of a first nonoperational structure and (ii) a second pattern that reports a physical property of a second nonoperational structure; and

calculating at least relative physical locations of said first and second nonoperational structures on the disc.

196. The system of claim 189 wherein said server computer is capable of analyzing by mapping physical locations of structural nonoperational structures on a surface of an optical disc by:

determining a relative physical location of at least one of said nonoperational structures; and

marking a representation of the surface of an optical disc with at least one object that reflects said at least one relative physical location.

197. The method of claim 188, wherein said disc is trackable and said nonoperational structure is concurrently readable with said disc's trackable attributes.

198. A computer readable medium containing instructions for analyzing data from an optical disc according to the method of claim 188.

199. A computer readable medium containing instructions for analyzing data from an optical disc according to the method of claim 197.

SUB A27> 200. A visual display of at least one software-generated object, wherein said object reports a physical property of a nonoperational structure of an optical disc.

201. The display of claim 200, wherein said property is the position of said nonoperational structure on said disc.

202. The display of claim 200, wherein said property is the size, in at least one dimension, of said nonoperational structure.

203. The display of claim 202, wherein said dimension is in the disc's tangential direction.

204. The display of claim 200, wherein said display is ephemeral.

SUB A28> 205. A method for automatically selecting an amplitude threshold for use in counting nonoperational structures in data acquired by reading an optical disc having at least one readable nonoperational structure, said method comprising:

processing a number of different estimated amplitude thresholds, said method comprising processing each of said different estimated amplitude thresholds by:

selecting an estimated amplitude threshold,

decoding said data using said estimated threshold to generate a result object, said result object at least comprising widths of decoded nonoperational features,

segregating said widths into a series of width segments, and

selecting a peak segment from said series of width segments, wherein said peak segment includes a maximum number of said decoded features; and

selecting an optimal threshold from said different estimated thresholds, wherein said optimal threshold is the estimated threshold that causes said decoding to produce a largest of said maximum number of features that fall within its peak segment.

206. A method for counting nonoperational features in data acquired by reading an optical disc having at least one readable nonoperational structure, said method comprising:

segregating detected widths into a series of width segments, thereby creating a statistical distribution of widths that includes at least one peak;

calculating a standard deviation of said distribution of widths about said at least one peak; and

adding the number of features that fall within a certain number of said standard deviations.

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